



## Functional medicine for long-COVID

Guest: Dr. David Brady

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**Alex Howard - [00:00:15]**

Welcome, everyone, to this interview where I'm super excited to be talking with Dr. David Brady. Firstly, Dr. David Brady, welcome and thank you for joining me.

**Dr. David Brady**

Hey, thank you. It's great to be with you again. I think we've done this a few times already. So let's do one more round.

**Alex Howard**

We have. I always enjoy our interviews. And you came very kindly a few years ago to do an in-person training for our practitioner team, which I know was immensely well received as well.

**Dr. David Brady**

Years ago. I was just thinking about that, this morning. It'll be two years in June. It's hard to believe. It seems like a couple of months ago. It was an entirely different world when I was over there.

**Alex Howard**

I remember with a certain level of envy because you were leaving to go to the Nuremberg to go car racing the next day. I was waving you off in an uber thinking, I wish I was going too.

**Dr. David Brady**

I have some stories about that, but I'll tell you offline.

**Alex Howard**

So we're going to talk about long-COVID from the lens of functional medicine. And I think this is an important dialogue. And I think particularly, as we'll get into, David, because of some of the experiences your wife has had, you've had a particular lens, I think, into seeing this.

Just to give people Dr. Brady's background, Dr. David Brady is a foremost authority on properly diagnosing and treating fibromyalgia, chronic gastrointestinal and autoimmune conditions, and is published in leading peer reviewed medical journals, including Open Journal of Rheumatology, Autoimmune Disease and Integrative Medicine a Clinicians Journal. In Private Practice at Whole Body Medicine in Fairfield, Connecticut. And also you were saying to me off camera, half the year in Florida now as well. Dr. Brady is additionally the former long time vice president of the Division of Health Sciences and director of the Human Nutrition Institute at the University of Bridgeport, where he continues to serve as an associate professor of clinical sciences. He's also the chief medical officer of Designs for Health Incorporated and Diagnostics Solutions Laboratory, LLC.

So, David, I think a good starting point would just be to set a little bit of a frame around this conversation, this sort of condition of long-COVID is something that's been emerging really over the last 9, 10 months or so. When we talk about long-COVID, what are we actually talking about?

**Dr. David Brady - [00:02:42]**

Well, that's a great question and people are still trying to define it. But I can, well here, right on my desk, major paper, very thick, trying to define long-haul COVID. This is a multi center study with researchers in London, New York and in Portland, in Oregon, in three major academic health centers. So it is getting a lot of attention. It's starting to get some rapid funding and people are trying to kind of get their arms around it and define it, but in a more formal way, sort of in a more diagnostic criteria, academic way. But in the front lines, as clinicians, as physicians, we've been dealing with this for a while now and trying to figure it out as we go.

It has a lot of similarities to things that we deal with quite frequently and more of the functional integrative medicine realm and some differences. So, we noticed it right away, actually, that people who either were confirmed positive on a PCR test or some sort of diagnostic test with COVID-19 or just never had a positive test, but had all of the hallmark clinical symptoms were just, you know, there's no way it would be anything else. When they got over the, if they were lucky enough to get over the acute respiratory symptoms and high temperature and things like that, most of my long-haul patients actually never got better totally. It's not like their symptoms went away, they got all better and then they got hit later. They just never, their symptoms never fully resolved and just sort of changed and more over time.

But we've definitely seen commonality in the symptom profile and clusters across all of these long-haulers across the world, too. I mean, in this study I just picked up that I have on my desk right now, and it's in a stack of others, there are respondents in there from 56 different countries. So this isn't a localized phenomena in one geographical region of the world or in one subset of people of a certain genetic, lineage or culture or gender or anything. It's just sort of wide ranging. So it's kind of interesting. Yeah.

**Alex Howard**

And I know that you had a particular deepening perhaps of your interest in this, because your wife has been affected, perhaps you can say a little bit about that.

**Dr. David Brady**

Yeah, my lovely wife, Stacey, she, just to give you a little bit of a preview, I mean, she is a really, really healthy girl, she was a professional dancer and a dance instructor her whole life. So exceedingly fit. I couldn't keep up with her doing physical things, exercise things like that. Great diet, good body composition, no comorbidities, no hypertension, no sugar problems. I mean, she's just sort of the model of health for someone in their mid 40s.

And she, in March all of a sudden started getting shortness of breath, like air hunger, like starving for air. And then she got very fatigued and then she would get really, really rapid heartbeat, like tachycardic to the point where feeling like panicked about it. And she got some other weird stuff, like she got a lot of joint pain, a lot of pain around the rib cage, which is a really common symptom in COVID and long-haul COVID. And she even, she never lost her taste and smell, she never got that classic symptom but she got another classic symptom that's really novel and unique to COVID. And maybe you've heard of this, people stating that they feel almost like a buzzing or like a vibratory energetic kind of sensation in their body in different areas, like down through their limbs and things like that, almost like a fizzing inside the body. And I've had multiple people describe it like that on their own spontaneously. And how many, how often would someone come up with fizzing?

**Alex Howard**

It's an unusual choice of word, yeah.

**Dr. David Brady - [00:07:10]**

Yeah. It's a descriptor. And so she had that and she got pretty bad. And this is March in the northeast of the U.S. And at that point, New York was melting down with COVID and everyone was bailing out to the outer suburbs. So Connecticut, New Jersey. And they were just bailing out. And so those systems started becoming overwhelmed. So the last thing I wanted is to bring her to an emergency room in a hospital in that region and then, God forbid, end up in the ICU. And at that time, they were not doing very well with how they were treating acute COVID.

**Alex Howard**

We've learnt a lot since then right?

**Dr. David Brady**

They were rushing people to ventilators, treating it like any old other viral pneumonia. And it wasn't having good outcomes, put it that way. And ironically enough, medicine today is so standard of care protocol driven. Despite the bad outcomes, they just kept doing it, hoping that maybe it would somehow work. It actually took some really brave acute care ICU docs that actually make videos and put them on YouTube and Tik Tok and all of that, to basically say, hey, we got to stop rushing people to ventilators, we're killing them. We need to do something different here. We need to rethink it, relook at it. This is not your typical viral pneumonia. And that was the leverage to try to start getting things to change a little bit.

But back to my wife, I didn't want her going anywhere near that environment. So luckily, I'm in a group, medical, integrated medical practice in Connecticut. So I was able to get to my practice and I literally brought home IV Unit, IV ringers and I was doing high dose of, and my partner in the practice was helping, Dr. Breiner was very, very helpful in this, we were doing high dose Vitamin C, Myers' cocktails. We were doing blood ozone and Hemealumen, where we were radiating passed through blood with infrared to kill pathogens and UV. And then we were injecting ozone. We were doing nebulized glutathione, every supplement you can imagine. Any medication that was coming out that the data looked good on. And it was just everything in a quest to keep her out of hospital. And I brought, luckily I was able to get home oxygen, a home oxygen unit. Now, I'd have to say that did more than anything.

**Alex Howard**

Is that right? Wow.

**Dr. David Brady**

Higher percentage of oxygen for her to put on when she would get these intermittent air hunger, really bad thing. And it was definitely interesting. It was worse at night. So when the evening time would come, she would get a lot worse.

**Alex Howard**

How long was that acute period for?

**Dr. David Brady**

Probably about two weeks to three weeks, it was pretty bad. It would seem like it would get better and then boom, it would hit again. Meanwhile, she was never positive. I'm the chief medical officer, of a laboratory that was doing, we were one of the first FDA approved through the Emergency Youth Authorization for a real time PCR diagnostic COVID-19 nasopharyngeal swab. So, here I am. I have access to all this stuff. And I swabbed her myself so I know I collected the sample right a couple of times and she never came up positive. She didn't. Now, maybe she just never produced that kind of viral load in the upper respiratory tract because she never got like acute lung injury, or acute respiratory distress syndrome to the point I would say it was anything like that.

But it was scary. I mean and if I didn't have access, if I didn't have the knowledge, first of all, I didn't have the access to have those kind of things brought into the house, she would have ended up in the hospital. And I don't know what route she would have went down, because at that time, at least where we were in Connecticut, doctors weren't seeing people in ambulatory practice. I mean, if you called your primary care physician or your internal medicine doctor or any specialist, you got the answer machine. It's like go to the hospital. It was hospital or nothing, essentially. And I actually never thought I'd see our medical care delivery system in the United States reduced to that. It was really, go to the hospital or stay home and stay home and do the best you can.

**Alex Howard - [00:11:52]**

It was the same here, yeah.

**Dr. David Brady**

Take care of yourself and get through it. Or if it gets really, really bad and you're thinking you're going to die, then come to the hospital. Right. So I think it was a real wake up call for a lot of people. I hope they don't forget the lesson, people forget the lessons quick, I think it was a wake up call. It's shocked people. They were trained to think, oh, modern medicine is always going to have some magic bullet now.

**Alex Howard**

There's always going to be a bed for me right.

**Dr. David Brady**

Yeah, yeah there's going to be. No big deal. They forgot that it wasn't that long ago that there were things that wiped out big parts of the population even back in the earlier 20th century with influenza epidemics and Spanish flu and things like that. So that's what we were reduced to. And it was funny how people went back real quick and they relearned and they found things like Elderberry and Echinacea and Vitamin C and and zinc. And, they went back to stuff that actually does work. Right. It's been pushed to the side because it's not economically the engine anymore. And it's the model. It's not the model. But they went back and I was actually, Alex, I was getting phone calls on my cell phone from ICU doctors in New York hospitals tracking me down somehow on my cell phone, asking me how to do high dose Vitamin C drips.

I had a doc from a hospital in Massachusetts called and wanted to know how they can do, like really quickly do some sort of pilot trial on blood ozone in a hospital.

**Alex Howard**

That's great that those questions are being asked.

**Dr. David Brady**

It was great, but I thought I was living in some bizarro land, like I landed on some other planet, like I never thought that would happen.

But, on the other side, we were ramping up like crazy, dropping what we normally do testing wise and trying to just contribute. And we were a molecular shop, so we developed one of the first COVID PCR tests and then antibody tests and things like that. And on the nutraceutical side at Designs for Health we were just trying to keep people with immune products so that if they were needing resveratrol or Vitamin C or immunitone or something like that, botanicals, elderberries, something, then they can get them because on the shelves they're just gone.

**Alex Howard - [00:14:22]**

I remember the phone calls from our patients. And I was calling the distributors and the supplement companies and they were like, I've sold a year's worth of product in the last 48 hours. It was just, it was insane.

**Dr. David Brady**

We were running our plants on three shifts. I mean, like 24 hours a day trying to keep everyone healthy. We were one of the first companies in the U.S. to do broad-based employee testing to try to keep everyone healthy. And I think sales of all of our immune related product SKU's went up 400 percent in April, in March and April. So it was just a mad scramble. And then we were looking at the data coming out real time and designing new products to get to market to try to help it be more effective, but also easier for people because, it's difficult, especially people who are not used to this model of care and using supplements to take Vitamin D and zinc and elderberry and Vitamin C, so we were putting things together like in effervescent drinks and things like that to deliver everything in one shot basically, and trying to rush that stuff out the door while I'm trying to keep my wife out of the hospital.

**Alex Howard**

That's intense.

**Dr. David Brady**

Sticking her in the car and bringing her to my practice where we had more stuff available. So, eventually she kind of cleared from the acute stuff, but she was left with the, most significant symptoms were definitely fatigue, like just lack of energy and vitality, like a chronic fatigue. Worse post exertional and by exertional I don't mean going and running a marathon. I mean walking across the house or trying to do a basic, do the dishes right. Or take the dog out for a little walk. I mean, she was struggling and this was an athlete. This is a professional.

**Alex Howard**

It must have been really tough for her as well, that contrast of lifestyle so quickly.

**Dr. David Brady**

Yeah. And then we had a similar experience because both of my sons, you know we lived in Connecticut, kind of in the woods with a stream and deer everywhere, ticks everywhere. They both got coinfection. So they spent a year or two in a similar situation actually from that. So we kind of. And she was the main caretaker. I was off working and taking care of other patients, so she's real knowledgeable. I mean, I should give her an honorary nutrition degree and stuff. But one of the biggest burdens on her was psychologically that she couldn't take care of her family and take care of her kids.

So besides the fatigue, though, that really weird rib pain was probably the worst for about a month. She felt like she had someone sticking a knife in her back and if anyone's ever had, what the chiropractor's will say, oh, you have a rib out, like in the back, like it feels like there's literally like a javelin sticking through your rib cage. She would get those pains and they would come and then they would shut off. Right. And I've had that across the board in so many long-haulers, this weird chest wall, rib cage pain. And I got her an MRI, CT, post contract. I even did stuff I don't normally do just to find out, did she have micro clots in her lungs? Because then it was going around with those micro clots, a little pulmonary embolism things. I'm like, but she wouldn't get the pain. The pain wasn't pleuritic like, it didn't vary with her breathing. So it didn't seem like a pulmonary plural type of problem. She wasn't short of breath when she got the pain. So it didn't all add up like PE or pleuritis or something like that.

And then she started getting migratory joint pains, almost like she had rheumatoid arthritis, mainly in the hands, the small joints of the hands and wrists and a lot of muscle ache just aching. So almost very, very similar to the patient symptom profiles we see both in fibromyalgia, classic fibromyalgia patients and the ME/CFS patients as well, and I think it's just part and parcel of the fact and I think it reinforces what I think a lot of us, many of the researchers, but certainly those of us in functional and integrative medicine, that a lot of the ME/CFS chronic fatigue syndrome and potentially even classic fibromyalgia really behave as a immunal dysfunctional problem that affects multiple systems, organs and tissues, that is related to some past infection. So whether it's the classic post viral, you know the easiest is post viral fatigue is not all that abnormal. But to see that larger constellation of symptoms, I think the closest thing I can make an analogy of COVID long-haul to is chronic or tertiary Lyme disease and some ME/CFS patients.

So, many studies, but this one that I held up and I'm just looking at here and it's frightening. I mean, they surveyed thousands and thousands of people that had COVID-19, many of them same scenario never really quite had the positive test, but they had enough of the hallmark symptoms and the whole clinical history, some hospitalized, some not, that they were categorized as those subjects with COVID. 93 percent of them in this study months later, 7, 8 months out. Complain of some ongoing lingering symptoms that affect their daily life. So that's massive, right?

But look at Bergamo, remember that when Italy, Bergamo was massively hit, elderly population and so forth. Really one of the first studies on long-haul COVID was in Bergamo. And they contacted everyone in that region who was hospitalized with COVID. And that first study showed that more significantly, more than 50 percent of them still had life altering symptoms. So if you run the numbers on how many people, everyone's, you know, obviously, and you understand why they're concentrating on acute COVID and deaths from COVID. I get it's the low hanging fruit. People are dying I get it. But I don't think the population, I don't think public health authorities, governments, anything have even come close to start grappling with what this is going to mean in the much longer term.

You'd think we'd have a lot of ME/CFS patients and patients that are not getting solutions from the conventional medical routes when they go from specialist to specialist to specialist, finally, they usually find their way into a functional or integrative medicine doctor or nutritionist or like your clinic or my clinic. I think we're going to be absolutely overrun in the next decade.

### **Alex Howard - [00:21:54]**

I mean it happened for us. In fact, we just put out the day of recording this, a video sort of explaining what happened, that we had to start running waiting lists last summer. We had to stop putting out any newsletters because every time we sent out an email, we just had a massive flood of people coming in that we just didn't have the capacity to deal with. And I think it's interesting, getting COVID at this point doesn't particularly scare me because I'm pretty likely to survive. What scares me is the long-COVID stories that I'm seeing.

And then that just leads into my question of what's your observation at this point? And obviously, all of our understanding is still evolving on this topic. But what's your observation at this point of why some people develop this sort of long-haul situation and others others don't? You spoke through it briefly just now but I'd just like to open that up a little bit more.

### **Dr. David Brady**

Yeah. I mean, that's the million dollar question or questions. We're looking at that in the laboratory. We were doing a lot of PCR COVID diagnostic testing, but with hospital partners. And we were able to, in parallel to that, get serum or plasma to do a parallel antibody IgG and IgM testing . At times we were getting stool and we were doing PCR, SARS-CoV-2 screening in the GI tract and toward the end, we were starting to get buccal swabs and we're running genomics on them, so and there are many centers that are trying to look at what are unique in the genomics or the SNP patterns in patients who go down that road to acute respiratory distress syndrome, respirator and death, versus those who get it and are asymptomatic or very mildly symptomatic. But not only look at the genes and the SNPs, but the metabolomics, the microbiomics, what is going on?

Clearly, there is an inherent genetic predisposition for some people to go down this really acute route, even if they're extremely healthy. I mean, we've got Olympic athletes, a lot of athletes that died, right. I mean, but most people don't, right. You have in the high 90 percent chance of surviving it unless you're elderly, obese, have a lot of comorbidities and so forth. But there are definitely outliers to it. What makes those people outliers to go down the acute route? They're still trying to mine that. And they found some things along cytokine pathways and different things that may make people susceptible. They've even found higher predilections in certain sort of groups that came from different areas of the world, a higher likelihood.

But the long-haul thing's a little different, we don't know. It's hard to even do the studies at this point because there's no like Universal agreed upon definition of what long-haul is. Until you have, this is someone with long-haul, this is not. It's hard to do any kind of clean studies. And that's why research on fibromyalgia, chronic fatigue syndrome, ME is real dirty and always has been.

**Alex Howard - [00:25:06]**

And it's why it's taken so long to even get recognition and definition of subgroups and everything else.

**Dr. David Brady**

Yeah, they have entirely different criteria on who has it and who doesn't. So how do you do clean research? Right. So I think that will come.

**Alex Howard**

What's your hunches at this point? And I'm not going to hold you to these in years to come, but I'm sort of curious as to... Let me rephrase that slightly. What are the kind of experiments or questions that you are asking with enthusiasm at this point?

**Dr. David Brady**

Yeah, I think it's multifactorial, but one of the biggest ones, actually, there was just a really good study published and put out by Aristo Vojdani and his son as well who's a medical researcher and Datis Kharrazian, on looking at cross reactivity. It was a laboratory study, but it was looking at cross reactivity of the SARS-CoV-2 spike protein, envelope protein. And a couple of the nasty proteins that the virus does its dirty work with and the vaccines are targeted against, right. And what is their predilection for cross reactivity with various human host tissues?

And the results were frightening. The cross reactivity, I've never seen cross reactivity of pathogenic proteins that was that vast across tissues from neurological to vascular to renal to cardiac to brain. I mean, it's just amazing. So what it does bring up is the specter of significant molecular mimicry type crossover autoimmunity in humans having been exposed to SARS-CoV-2 and then later going on to develop autoimmune conditions.

Frankly, I'm concerned about this not only from the initial viral infection. I'm also concerned about it with the vaccines because we know vaccines are very prone to cause autoimmune diseases, their most common side effect. I mean, you can read the work of Yehuda Shoenfeld and many others. And you look at the incidence of autoimmunity of all types across the Western world and the more and more and more and more aggressive immunization schedules and adjuvants and things like that.

Now, you can make a very good argument. Well, the positive outweighs the negative and you can argue it from the herd immunity benefit or you can argue it from the risk of the individual. There are two very different places to argue from. So and I'm not here to really debate vaccines or immunizations. I'm not universally against them, nothing like that. But we know that autoimmunity is the biggest potential problem and we know the largest number of side effects even of these new vaccines for COVID-19 are autoimmune related conditions, neurological conditions and things like that.

**Alex Howard - [00:28:03]**

There seems to be something in the long-haul sort of crowd of Mast Cell Activation and some sort of system getting overloaded and not being able to switch off. And I wonder if that's something you're saying.

**Dr. David Brady**

It's that classic feet forward slippery funnel thing where some people, when they're exposed to this virus, it's almost like their bodies defense mechanism to the virus is worse for them than the virus. The potential or the mechanisms of hopeful cure are worse than the disease and that, they go into... The classic was the cytokine storm or the bradykinin storm and all of that, that they just ratchet up their cytokine system in ways that's highly inflammatory in a very, very aggressive posture. And then they're priming T cells. They're creating changes across their immune response that are then transitioning like in molecular mimicry, where they start not only attacking the virus, they're just attacking, it's friendly fire, they're just attacking anything that even looks remotely like the virus or like one of the proteins on the virus. And they're inflaming their synovium, they're getting inflammatory arthritis. They're inflaming their peripheral nerves and they're getting these weird neurological neuropathies. They're inflaming their blood vessels and endothelium and they're getting blood clots and vascular problems. They're getting cross reactivity and autoimmune inflammatory damage to their myocardium and actually having heart problems and brain.

The top three symptoms that long-haulers complain of. The first one is fatigue. The second one is post-exertional malaise. Right. So it's like another type of fatigue. And then it's pain, broad based pain across the body. And I think actually, I'll look in this exact study, it was fatigue post-exertional malaise. Oh and third was actually cognitive dysfunction. That's what actually got me talking down that line. I talked about cross reactivity with the brain. So they're having a hard time thinking clearly. And, hey, it's what we've been treating for decades.

**Alex Howard**

This all sounds terribly familiar to some of us.

**Dr. David Brady**

It's like ME/CFS on steroids, as they said. Right.

**Alex Howard**

You know one of the things that we're seeing, which is also interesting, and it reminds me of your work around how you label classic fibromyalgia, that the work that we've been doing for many years around calming, what we call a maladaptive stress response and a sort of over activated nervous system response. Obviously, it's not the only piece of the jigsaw, but as a part of the jigsaw, that work seems to be having quite a big impact on some of this crowd as well. And I was curious as to if you were seeing some of that? Particularly given some of your historical work around fibromyalgia.

**Dr. David Brady**

Yeah, absolutely. I mean, whenever people get into this ratcheted up kind of feet forward, it's almost like emergency time, fight or flight. Like they're just they're in emergency mode biologically, and that includes central nervous system excitation and going into a state of hypervigilance. And we see this in long-hauler's anxiety when they didn't have it before. Insomnia like crazy, their mind won't shut off and they're anxious or their heart's beating like crazy, they have tachycardia at night.

So, yeah, that hypervigilance, sympathetic, dominant type of state, it's hard to feel good and be healthy in that state for any length of time. It's supposed to be very, very brief. A biological response to get out of harm's way. It's not supposed to be a persistent thing. So, yeah, we've been using things, anxiolytics of various types, including natural ones, whether it's fermented GABA, theonine, ashwagandha, German chamomile, other types of calming botanicals to deal with that aspect of it.



But I find that a lot of them have sort of energy deficient state almost universally throughout the cells.

So I know there's been a lot of work done, a lot of it over in your neck of the woods there, on NAD+ generation with NMN and NR to just produce more NAD+ and mitochondrial function. So using those NAD+ generators with CoQ10 and L-carnitine and Ribose and things like that.

### **Alex Howard - [00:32:57]**

Good old classic mitochondrial support again. We can definitely see that's helping.

### **Dr. David Brady**

It's definitely helping. It's not like a cure. Right. Even NAD drips like IV. But we've been using a lot of functional peptides, so we're using immunomodulatory peptides that we would have used before in just autoimmune conditions whether it's MS or RA or lupus or whatever, we're using them in long-haul. So like Thymosin, Thymosin alpha 1 is an immune modulatory peptide that, I have my wife on it. She's done much better on it. And it wasn't universally curative, but it definitely moved the dial. And we generally see that.

And then there's a mitochondrial messaging peptide that really can up regulate and enhance exogenous energy production and it's called SS-31. So we're using that. There's a couple of other immune peptides. I haven't used this one much, but some colleagues of mine have. It's Thymosin beta-4 and then for the pain we've used the BPC-157 peptides. So and peptides for people who don't know, like insulin is probably the most broadly used peptide. It's more amino acid strung together than you would call it amino, you know like amino acid formula. But it's less than would be like a drug or nutraceutical which is much more compound or much more complex type of product. So it's specific amino acid motifs or sequences that have signalling properties in the body and they can be very, very powerful signalling properties. So they're less like drugs that go in and like swing a big hammer at one target, they knock down an enzyme function or they block a receptor or they facilitate a receptor. The peptides are more going in as signalling agents telling the body what to do in different ways.

### **Alex Howard**

Which tends to be a little less stimulating, a little bit gentler for the system.

### **Dr. David Brady**

Yeah, but it's interesting. I don't know what's going on with the environment in the U.K, but in the United States, the peptide therapy and exosomes and things like that have gotten extremely popular with the integrative and functional medicine doctors because they work so well, they really move the dial. And before they were kind of in this gray zone, they weren't drugs, they weren't supplements. They were somewhere in the middle. They were falling in between the regulatory cracks. And they required a doctor's prescription to a compounding pharmacists. And they would build, they would provide or build the peptide matrix.

But now our FDA is clamping down on peptides. It's making them, well they're clamping down on compounding pharmacies in general, making it very difficult for them to make any kind of custom therapeutics. I think they just want it all through the big pharmaceutical houses. And so many people are turning to this therapy and it's working so well and the research is so good over in Europe on them. I think they're looking at it and going, uh-oh. So they want to regulate it, pharma wants a piece of the pie. So some of these, particularly these immunological modulating peptides.

Now the FDA has come in and said that we're classifying them now as biologics, which are drugs, very expensive drugs used for autoimmunity, so they're basically saying, hey, listen, these are effectively unapproved biologic drugs. How long we can access and use these things is anyone's guess. I'm hoping we can because I think these things are massively important with trying to treat COVID long-haul, along with those other things that we already use, things to calm the nervous

system, things to get mitochondria working. We use some things that seem to be helping people when they're antiviral or antiviral docking.

So it's pretty interesting the things that we know and that we turn to that are beneficial to prevent you from getting COVID, or even to take when you have COVID, are also therapeutic and helpful in COVID long hauls. So things like Resveratrol and things like Quercetin and Vitamin C and all these plant bioflavonoids and polyphenols. And we're using them mainly to reduce getting COVID, or during COVID, because those things can block viral adhesion or docking to the cell in specific mechanisms on the outside or inside of the membrane. Zinc, some of the things can get more zinc in the cell, zinc, zinc ionophores make it a hostile environment inside the cell for the virus.

So it makes sense why all those things would work. In preventing or at least we hope, reducing the likelihood of you going on to clinical COVID-19 if you get exposed to SARS-CoV-2 or potentially benefit you while you have an active infection, we're not sure why they seem to work in long-haul because no one has yet been able to identify that there's still, you know, six, seven months later active SARS-CoV-2 virus infection, or is it simply the leftover wreckage from the viral infection that basically reprogrammed your immune and inflammatory response?

### **Alex Howard - [00:38:34]**

Yeah. And it reminds me of when we started the Optimum Health Clinic in sort of 2003. A lot of what we were doing was really experimental and like just figuring stuff out. Well, let's try that, and sort of being very honest with the patient community and saying we're sort of learning together. And there's something for me at the moment with what's happening with the long haulers particularly where I really like the fact that there's that freedom to be innovative because they're not expecting definitive answers. We know we don't have definitive answers because we're still right at the beginning of figuring this thing out and trying different things. Some things that we know generally work well with the fatigue population. Other things seem to work well in subgroups and not so in others. But there's something I think is quite liberating about the approach.

### **Dr. David Brady**

Yeah and that's why it's alarming when they can take the arrow out of your quiver, right? Because from a regulatory standpoint, listen, I understand if there are reports of harm, right, and you're using agents that have a high likelihood of doing harm. The benefit of these is they really don't do any harm, the worse that's going to happen is they're not going to work. Which you can say, well you know it costs people money, it costs people time, false hope but we're trying the best that we can.

But by and large, we're not using agents that are going to kill you or have really bad side effects. So I wish that was taken into account more. But I think, some of it's cultural power, some of it's economics, some of it's politics. I mean I've never seen a medical or a scientific topic become so politically polarized and injected with politics than we saw with this pandemic. And it's really sad, it's shameful actually. But it definitely happened. People took polar camps, even on therapeutics, based on their politics.

### **Alex Howard**

That's really insane.

### **Dr. David Brady**

I mean even scientists did that, right.

### **Alex Howard**

But I think there's also something which, I see it's potentially going to go one of two ways. It's either going to be that governments don't really invest the money and the energy that needs to be invested in really supporting the long-haulers, then what's going to happen is those long-haulers are going to

start fighting for the already limited services that the ME, CFS, fibromyalgia populations are already struggling with. Or there's the potential for something new to happen. And there's the recognition that there are so many people that are being affected. And maybe it takes another year or two for the kind of acute crisis to settle, that it becomes clear. But there's then the potential for work that people like yourself have been doing for so many years to hopefully have their heyday and hopefully have the level of support and funding and interest that's deserved.

**Dr. David Brady - [00:41:35]**

Yeah, I agree. Unfortunately, and I'm generally not a pessimist, I generally try to be glass half full, and I'm not a conspiracy theorist or anything like that. I've just been around a long time. I've seen this all play out. And I think it will be treated just as chronic fatigue and fibromyalgia and chronic lyme. I think they will ignore and pretend it doesn't exist as long as possible, until there is a viable, at least profitable, pharmaceutical agent that will modify the symptoms enough to make the patient's existence just marginally better. It doesn't cure them. It makes them marginally better, enough that they'll keep taking it every month. And then it will be real. And then you'll see in the United States, at least, you'll see television commercials all night long about it because it'll become a real thing.

I've seen it happen with multiple disorders and diagnoses. It wasn't real until there was an approved pharma agent and then they got the diagnostic code actually recognized. And then it's a real thing. Until then it doesn't exist, right. You know, this can't exist, I didn't learn about it in Yale Medical School or in Harvard Medical School. If they don't teach it there, it can't exist because they know everything, Alex! They know everything already. Everything about the body, that ever can exist in the body and ever could go wrong in the body, they know it already. That's the attitude.

**Alex Howard**

And I think it also goes back to one of the absolute fundamental principles of integrative and functional medicine approaches which is, we're not treating symptoms, we're treating underlying causes. And those pharmaceuticals...

**Dr. David Brady**

Well we try! We do a little...

**Alex Howard**

We attempt. Yes, we might soften some symptoms, but the intention is to try and go for the underlying cause. And that's where...

**Dr. David Brady**

That used to be the intention of standard medicine too. And it morphed a couple of decades ago. And it wasn't the doctors who did it, it was the therapeutic agent design construct that did it, that we don't really want to design things that cure stuff anymore, even if we can. We want to design things that manage chronic disease. We want to keep people sick enough that they need it, but alive enough to still go buy it. Forever. Until they finally do die. So we want to keep them alive a long time as customers, but we want them miserable enough while they're alive to continue to buy our product.

It sounds so like, oh this guy is off his rocker. Listen, I've just seen it. I've seen it happen and I've seen the way the drugs come out. Yeah. Once in a while, you have a drug that comes out now, even with all our modern, wonderful science, once in a while you get a drug that comes out to cure something, like the Hepatitis C curative drugs. Well, yeah, they're curative and they cost \$600,000 for a course of treatment.

**Alex Howard**

Wow.

**Dr. David Brady - [00:44:48]**

Now it's going to cost \$250,000 right. So, yeah. So it's either they're going to drain the money out of everyone slowly every month, like selling inkjet cartridges for printers. They're really going to whack you.

**Alex Howard**

That's a painful metaphor.

**Dr. David Brady**

It's unfortunate where everything is declining to. And I think people slowly, and this pushed it down the track faster. I think people woke up. Listen, they don't have every cure. They don't have any magic answer. Look, they were brought to their knees in this thing. They have no answers, they're all going back to the old stuff. Right. And when I really needed my medical provider, they weren't there. Their office was closed. I got their answering machine. Right. And so I think people have hopefully, some of them, enough of them, woke up and said, I better take care of myself. I better not be obese. I better not have hypertension and diabetes and be on statins and on 10 other medications and eat like crap and go to the drive thru, I need to be healthier. And it's not a guarantee but there's no doubt, people that were in better overall health fared much better in this pandemic. And I don't think this is going to be the last one. Right.

**Alex Howard**

One of the things that I do think is different here is that for many years, the ME/CFS fibromyalgia populations have been sort of shrouded in this sort of idea that it's all in their mind or that's not a legitimate condition. And there's been a lot of fragmentation within those communities of fighting over different sort of conceptual frameworks of what should be done. There does seem to be a level of unity and proactiveness among the long-haulers in terms of the online communities, which seems to have a freshness and seems to have a sort of cleanness in a sense that I think is going to be powerful.

**Dr. David Brady**

Yeah, I mean, my wife's very involved in a lot of the online forums and discussion groups with long-haulers where they can at least share their experiences on what may have helped them, what didn't help them, what are, where are resources to go to and just some kinship, you know. You've always got to be careful about those things. I've always said, like in the fibromyalgia and the chronic fatigue groups, some of those groups can become sort of chronic disease pity fests.

**Alex Howard**

I agree, you've got to be careful.

**Dr. David Brady**

They do not facilitate recovery. They facilitate going further down into the rabbit hole. Certainly not all of them. But I think when done right, those things are incredibly important. You need to have a community. You need to have a support network that often goes beyond just your immediate social group. And you need to deal with other people who are dealing with what you're dealing with. So we think they are really, really important. And you may be right. I hope you're right, that this scenario is going to produce enough people with the issue that numerically they can't be ignored.

**Alex Howard**

Yeah. How is your wife doing now?

**Dr. David Brady - [00:48:00]**

She's doing, I think, I mean, if you asked her, I think the answer is different every day, right. But that's just the nature of it. But I think overall she's steadily getting less problems. But it's day to day. I mean, one day she can have a really good day and the next day, all of a sudden, oh, man, the pain came back or the tachycardia is back, even taking the beta-blocker or whatever. Or if she pushes it, she just can't do the things she used to. I mean, I'd describe it this way, since March and she had COVID she is metabolically a different human being. There's no doubt about it. Now, I'm hoping there's light at the end of the tunnel and someday she's back to exactly what she was. I hope that's the case. I just don't know. But believe me, we're doing everything. I'm throwing everything at it. I know somebody that does everything, right. So not everyone has that luxury.

**Alex Howard**

But I think it's great that people like you that do that can then use that as the place to really discover what does and doesn't work, going beyond just the pieces that are obviously in front of you.

**Dr. David Brady**

Yeah, but none of us have all the answers to this one. Not yet. I mean, I probably never will, but look at chronic Lyme. I mean. No one really still has great answers to that. I mean, there's all these protocols and all these, some people do well on this, most people don't. I guess it's better that there are more options than there used to be. But I still don't think it's in great shape.

**Alex Howard**

I can always tell the practitioners that are living at the coalface because they talk with a sort of humility, because I think that's the reality that there are, yes there are those simple cases where we know what we, we do what we know that works and it works. And it's a sort of wonderful thing. But there are a lot of these cases which are complicated, and that's where we learn and that's where we discover things. But it's also, it's not smooth sailing.

**Dr. David Brady**

And I tell that to all my patients, particularly now with the long-haulers all coming in and I say, listen, don't look to me like some world expert on long-haul syndrome. I am not. I don't have all the answers here. I've had, I come from a background of functional integrative metabolic medicine where we're used to dealing with these complex, multifactorial kind of things that involve a lot of the components that you have in long-haul, the fatigue, the inflammation, the autoimmunity. And then I have this personal experience with trying to treat my own wife and so forth. So I may be in a better situation than just walking into your family doctor, but I am not the end all be all to this. But I'm going to do my best to help you. And I think a lot, I think more doctors should be like that.

Listen, I've gone into a patient room. I remember several times. And I walked into a patient in a room where a patient I've had for a while, I was treating her for a while for a complex condition. And then I walked in and I put my hand out. That was before COVID I put my hand out.

**Alex Howard**

When we could shake hands yeah.

**Dr. David Brady**

And I said, Hi, I'm Dr. Jones. Nice to meet you. She goes, What are you talking about? She goes, You've been treating me for like a year. You're Dr. Brady. And I said, No, I'm not Dr. Brady. Today, I'm Dr. Jones, because Dr. Brady evidently has no clue what's wrong with you. We're starting again with me as, Dr. Jones. Maybe I'll get better this time. And they usually laugh and they feel like, hey, this guy's at least trying.

**Alex Howard - [00:51:38]**

That's a great place to end. Dr. Brady people that want to find out more about you and your work, what's the best way for them to do that?

**Dr. David Brady**

Well, probably two places. My main professional web presence is at [drdavidbrady.com](http://drdavidbrady.com).

So that has a lot of information about me and a lot of resources there from interviews, podcasts, TV appearances, articles, papers, things like that, on a myriad of things, and then information on my practice and things.

But then if you're more interested in my book, *The Fibro Fix*, my latest book, *The Fibro Fix* then you can go to that dedicated website. So it's just [fibrofix.com](http://fibrofix.com).

So for people who have or have been told they have fibromyalgia or even chronic fatigue syndrome, I mean, they can probably learn a lot from the resources on that site and/or reading the book.

**Alex Howard**

That's awesome. Dr. Brady thank you so much, I always enjoy our interviews, I think that, I love the fact you bring the humility to it, but also there's a lot of hope in what you're saying as well. So thank you so much.

**Dr. David Brady**

Thank you, Alex. Thanks for everything you do. You're doing good work.